

are manufd. by mixing heat-resistant polymers, carbon, and glass, heating the mixt. to soften and fuse it, mixing in particles of hard metal oxides, nitrides, and/or carbides and optionally magnetic materials, and compression molding the compn. Thus, 5 parts nylon 6 [25038-54-4] and 1.5 parts poly(methylstyrene) [9017-21-4] were mixed at 400° with 15 parts carbon fibers, then with powd. graphite 25, glass beads 6, SiO<sub>2</sub> 16, TiC 10, TiN 5, and allane coupling agents 5 parts, and compression molded into bars which after polishing had glossy, attractive surfaces.

100: 122442s Polypropylene films for shrink packaging. Mitsui Petrochemical Industries, Ltd. Jpn. Kokai Tokkyo Koho JP 58,45,976 [83,45,976] (Cl. C08L23/10), 18 Oct 1983, Appl. 78/48,899, 30 Apr 1976; 5 pp. The title films are prepd. by extruding mixts. of 70-95% cryst. propylene polymers and 5-30% 5-20-80-85 1-butene-*c*-ethylene random copolymer (I) [25087-34-7] (prepd. by V compd.-catalyzed polymn., d. 0.86-0.92) and biaxially drawing 3-10:1. Thus, a mixt. of 80% 8-94 ethylene-propylene copolymer [9010-79-1] [melt index (MI) 8.0 (230°)] and 10% 12-88 I [MI 10.0 (190°)] was extruded to a 1.0-mm sheet which was drawn 5:1 biaxially and heated at 80-130° for 5-20 s to give a 38- $\mu$ , heat-shrinkable, biaxially oriented film with haze 0.8%, shrinkage 10% (80°), impact strength 2200 kg-cm/cm<sup>2</sup> (after shrinkage, at room temp.), min. film-forming temp. 120°, and Young's modulus 17,000 kg/cm<sup>2</sup>, compared with 1.0, 5, 2000, 130°, and 18,000, resp., without I.

100: 122443a Polyethylene cable insulation. Hitachi Cable, Ltd. Jpn. Kokai Tokkyo Koho JP 58,184,208 [83,184,208] (Cl. H01B7/28), 27 Oct 1983, Appl. 82/66,999, 21 Apr 1982; 3 pp. Conductors are insulated with crosslinked, high-pressure polyethylene (I) [9002-89-4] (d. 0.925-0.935, melt index >0.5) to give wires and cables. Thus, a cable jacketed with I (d. 0.927, melt index I) contg. 2.5 phr cumyl peroxide and 0.2 phr 4,4'-thiobis(6-tert-butyl-3-methylphenol) was left 18 mo. in water at 50 Hz and 8 kV with formation of 8200 trees/cm<sup>2</sup>, compared with >10<sup>4</sup> for a cable prepd. from I with d. 0.920 and melt index 1.

100: 122444b Paper-based electric insulators. Hitachi Cable, Ltd. Jpn. Kokai Tokkyo Koho JP 58,184,211 [83,184,211] (Cl. H01B19/04), 27 Oct 1983, Appl. 82/67,689, 22 Apr 1982; 2 pp. Swelling-resistant high-tensile paper-based elec. insulators are prepd. by coating paper with a polyolefin extrudate and then sectioning the material to cause penetration of the polyolefin into the paper.

100: 122445c Electric insulation. Mitsubishi Heavy Industries, Ltd. Jpn. Kokai Tokkyo Koho JP 58,183,250 [83,183,250] (Cl. B22B15/18), 26 Oct 1983, Appl. 82/66,227, 22 Apr 1982; 3 pp. Elec. insulation between a Cu plate and a rough steel plate can be improved by insertion of an insulating layer which is coated with a polyester resin putty, an epoxy resin putty, or the like. Thus, an unsatd. polyester coating material layer contg. glass flakes and a polyester putty layer were bonded to a Cu plate by means of an acrylic adhesive to give a plate having good elec. insulation, tensile adhesive shear strength 120 kg/cm<sup>2</sup>, and peel strength 15 kg/25 mm.

100: 122446d Adhesive tape. Matner, Martin; Stahl, Hans Georg; Zbrocki, Karl (Bayer A.-G.). Ger. Offen. DE 3,220,886 (Cl. C09J7/02), 08 Dec 1983, Appl. 03 Jun 1982; 12 pp. A polyester is used as a primer on a PVC [9002-84-2] or polypropylene [9003-07-0] film to improve the adhesion to an adhesive in the prep. of adhesive tapes. The polyester is applied in an aq. dispersion, eliminating the use of org. solvents previously used. The adhesive is a natural rubber-rosin ester mixt., a styrene-acrylate ester copolymer, etc. Thus, PVC film was coated with an aq. dispersion of a polyester (1.5 g/L), dried at 60°, coated with a benzene-toluene soln. of a natural rubber-rosin mixt. (25 g/m<sup>2</sup>), and heated at 70° to prep. an adhesive tape. In adhesion tests, the adhesive adhered more strongly to the primer than to itself.

100: 122447e Sheets for electronic part packaging. Reiko and Co., Ltd. Jpn. Kokai Tokkyo Koho JP 58,193,146 [83,193,146] (Cl. B22B15/08), 10 Nov 1983, Appl. 82/76,085, 08 May 1982; 6 pp. Sheets for electronic part packaging are prepd. by vacuum-metalizing a transparent plastic film to 10-250 Å on both sides so that the light transmittance is  $\geq 25\%$  and the elec. resistance is  $\leq 10^4$  Ω/square. Thus, 1 side of a 38- $\mu$  transparent polyester film was vacuum-metalized to form a 50-Å Cr layer having light transmittance 78% and elec. resistance 6  $\times 10^4$  Ω/square and the other side of the film was vacuum-metalized to form a 40-Å Cr layer having light transmittance 94% and elec. resistance 1.5  $\times 10^4$  Ω/square. Both sides of the film were coated to 0.6  $\mu$  with an acrylic resin to give a sheet having total light transmittance  $\sim 61\%$ . A bag made from the sheet was transparent and permitted no disturbance to a liq. crystal display by 6000-10,000 V static elec.

100: 122448f Thermosetting resin decorative sheets. Sumitomo Bakelite Co., Ltd. Jpn. Kokai Tokkyo Koho JP 58,193,150 [83,193,150] (Cl. B22B31/18), 10 Nov 1983, Appl. 82/75,978, 08 May 1982; 8 pp. A thermosetting resin decorative sheet is hot-pressed with a thermoplastic film or sheet having m.p. 100-190°, and the film is peeled to give a finely embossed surface. When the product has high bonding strength. Thus, a laminate comprising a melamine resin [9003-08-1]-impregnated decorative paper and phenolic resin-impregnated core kraft papers and a polypropylene (I) [9003-07-0] (m.p. 160-180°) film (thickness 20-50  $\mu$ ) were pressed together at 160° and 100 kg/cm<sup>2</sup> for 50 min using a metal embossing plate. After the I film was peeled from the surface, the laminate was topcoated with a urethane polymer to give a 14  $\mu$  thickness in bottoming which 100/100 initially, 100/100 after 1 h, and 100/100 after 2 h, compared with 70/100, 45/100, and 30/100, resp., when the laminate was hot-pressed without

100: 122449g Ion exchangers selective for boron. Maier, Mircea; Craciun, Vasile (Combinatul Chimic, Victoria) Rom. RO 81,229 (Cl. C08F12/36), 30 Jan 1983, Appl. 102,933, 24 Dec 1980; 2 pp. B-selective anion exchangers are manufd. by eliminating chloromethylated polymers with N-methylglucamins (I) at 80-95° in DMF [68-12-2] or DMF-water mixts. Thus, 270 mL styrene, 43 mL 45% divinylbenzene, 18.6 mL acrylonitrile, 3 g BzO<sub>2</sub>, and 45 g polystyrene (II, mol. wt. 73,000) were added to 1000 mL water, 2 g poly(vinyl alc.), and 20 g NaCl under stirring, and the reaction mixt. was treated 4 h at 70° and 4 h at 90° to give a copolymer that was extd. with dichloroethane to remove II and chloromethylated to give a macroporous product contg. 18.18% Cl. 270 mL DMF contg. 160 g I was added to 160 mL DMF contg. 60 g chloromethylated copolymer at 80°, and the mixt. was heated 4.5 h at 90° with stirring to give a weakly basic anion exchanger with total volumetric capacity 1.87 meq/mL, mech. strength 98%, osmotic-shock stability 98.5%, and B-retention capacity  $\geq 4.5$  mg/mL in an aq. soln. with salinity 0-1000 mequiv NaCl/L.

100: 122450a Antistatic protective paper coverings for decorative plastic sheets. Daio Kakoshi Kogyo K. K. Jpn. Kokai Tokkyo Koho JP 58,191,777 [83,191,777] (Cl. C09J7/02), 09 Nov 1983, Appl. 82/76,216, 06 May 1982; 4 pp. Antistatic adhesive paper for protection of a plastic sheet, preventing dust attraction and leaving no stains on the decorative plastic surface after peeling, is prepd. from a water-sol. synthetic and/or natural polymer adhesive contg. a surfactant. Thus, kraft paper (40 g/m<sup>2</sup>), coated (at 10 g/m<sup>2</sup>) with an adhesive compn. comprising 20% aq. poly(vinyl alc.) (I) [9002-89-5] 100, polyethylene glycol 6, and 30% aq. anionic surfactant 10 parts, was sprayed with steam and applied to a PVC [9002-86-2] sheet for  $\geq 24$  h at 20° and 65% relative humidity. The PVC sheet, after removal of the paper, exhibited surface resistivity  $1.7 \times 10^{10}$  Ω at 500 V, half-life for electrostatic charge dissipation  $\leq 1$  s at 1 kV, and ash accumulation after 20 rubbing cycles 0 cm (all at 20° and 65% relative humidity), compared with  $\geq 1.6 \times 10^{14}$  Ω,  $\geq 2$  min, and 5.0 cm, resp., when an adhesive comprising only I was used.

100: 122451b Electrically conductive adhesive pastes. TDK Corp. Jpn. Kokai Tokkyo Koho JP 58,196,280 [83,196,280] (Cl. C09J3/14), 15 Nov 1983, Appl. 82/79,583, 12 May 1982; 3 pp. A chip-shaped condenser is joined to a printed circuit board at room temp. in a short time without temporary attachment using an acrylic polymer-based anaerobic adhesive paste contg. an elec. conductive powder.

100: 122452c Amino resin adhesives. Nishin Flour Milling Co., Ltd. Jpn. Kokai Tokkyo Koho JP 58,196,281 [83,196,281] (Cl. C09J3/16), 15 Nov 1983, Appl. 82/78,420, 12 May 1982; 4 pp. A stable amino resin adhesive compn. maintaining high viscosity and homogeneity for a long time contains a rice or corn flour and CM-cellulose and/or Na alginate [9005-38-3]. Thus, an adhesive mixt. comprising urea-formaldehyde resin [9011-05-6] 100, rice flour ( $\leq 100$  mesh) 25, Cellogen [9004-32-4] 0.25, water 18, and NH<sub>4</sub>Cl 0.3 part formed a homogeneous soln. and exhibited viscosity 21 P initially and 22 P after 150 min, compared with 18 and 98 P, resp., when the compn. did not contain rice flour.

100: 122453d Melamine resin decorative boards. Alca Kogyo Co., Ltd. Jpn. Kokai Tokkyo Koho JP 58,197,059 [83,197,059] (Cl. B22B27/42), 16 Nov 1983, Appl. 82/79,582, 12 May 1982; 3 pp. Nonbrittle decorative boards are manufd. in a process suitable for continuous prodn. by laminating core sheets of paper impregnated with rapid-curing melamine-phenolic resin compns. and surface sheet impregnated with melamine resins. Thus, four sheets of 120-g/m<sup>2</sup> kraft paper impregnated with melamine-PHON-HCHO initial condensate [25917-04-8] to 70% resin content were placed over a surface sheet of 50-g/m<sup>2</sup>  $\alpha$ -cellulose paper impregnated with melamine resin initial condensate to 80% resin content, and pressed at 140° and 80 kg/cm<sup>2</sup> for 10 s to obtain a laminate which could be bent to min. radius 8 mm without cracking, compared with 10 mm for a board prepd. similarly using phenolic resol-impregnated core sheets, which required 30 min to cure.

100: 122454e Stretched laminated plastic containers. Toyobo Co., Ltd. Jpn. Kokai Tokkyo Koho JP 58,197,060 [83,197,060] (Cl. B22B27/36), 16 Nov 1983, Appl. 82/80,701, 12 May 1982; 6 pp. Gas-barrier containers having excellent mech. strength and durability comprised laminates of an ethylene terephthalate polyester inner layer, a gas-barrier layer of 5-95% thermoplastic polyesters and 5-95% m-xylylene group-contg. polyamides (SM), and optionally a waterproof polymer outer layer, oriented by stretching in 2:1 direction. Thus, injection-molded plates of poly(ethylene terephthalate) (I) [25038-59-9] (intrinsic viscosity 0.75 dL/g in 8:4 PhOH/CaH<sub>3</sub>Cl<sub>4</sub> at 80°), 2.8 SM/I mixt., and I were laminated to form parisons having inner, barrier, and outer layer thicknesses 1.3, 1.4 and 1.3 mm, resp., which were heated to 110° and blow molded at 20 kg/cm<sup>2</sup> to form 1-L bottles 265 mm high and 80 mm in diam., which had O<sub>2</sub> gas permeability 3.0 cm<sup>3</sup>/m<sup>2</sup>-day-atm., steam permeability 0.6 g/m<sup>2</sup>-day, inner-barrier layer adhesion 630 g/cm, and barrier-outer layer adhesion 688 g/cm, compared with 1.8 cm<sup>3</sup>/m<sup>2</sup> day-atm., 0.6 g/m<sup>2</sup>-day,  $\sim 0$  g/cm and  $\sim 0$  g/cm, resp., for bottles prepd. identically using a 100%-SM barrier layer.

100: 122455f Composite plastic sheets. Denki Kagaku Kogyo K. K. Jpn. Kokai Tokkyo Koho JP 58,197,049 [83,197,049] (Cl. B22B27/30), 16 Nov 1983, Appl. 82/80,176, 14 May 1982; 6 pp. Laminates of styrene polymers with polyolefins have improved adhesion if the styrene polymer is blended with 4-80% block butadiene-styrene copolymer (I) [9003-65-9] and 5-30% olefin polymers. Thus, polystyrene (II) [9003-63-6] 75, block I 10, and polypropylene (III) [9003-67-6] 15 parts were mixed, pelletized, and coextruded with III to form a laminate having III and 18 and